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EXAMINER

CHUNG, JI YONG DAVID

ART UNIT

PAPER NUMBER

2143

DATE MAILED: 06/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                      |                                       |  |
|------------------------------|--------------------------------------|---------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>09/989,928 | <b>Applicant(s)</b><br>BOUDNIK ET AL. |  |
|                              | <b>Examiner</b><br>Ji-Yong D. Chung  | <b>Art Unit</b><br>2143               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 3/31/2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

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## **DETAILED ACTION**

### ***Response to Remarks***

1. Applicant's arguments and amendments filed on March 31, 2006, have been carefully considered, but several issues remain unresolved.

To applicant's arguments provided with the Request for Continued Examination, the Office has raised a number of issues. In the prior Office action, the Office indicated that the terms "test application" or "test framework" does not further limit the claims, because the adjective "test" does not define a clear feature. As explained in the prior Office action, the issue was predicated on the idea that the word "test" implies the intent of use, unless the word is otherwise defined within the claim to designate a feature.

In the Amendment, the applicant has responded,

The specification further states that the test systems are configured to execute the test execution requests dispatched by the system controller. The test execution requests correspond to the "test applications." Thus, the "test application represents a test suite that has been submitted for processing, wherein the test suite includes data files having commands specifically programmed to initiate a number of functional aspects of a software product being tested.

The Office acknowledges that the specification indicates that "test application" maybe different from non-test application. However, the word "test" carries with it, in its normal use the intent of use (i.e., the intent to test) rather than that the application itself has features that are designed specifically for testing purposes.

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To address the concerns, the applicant has amended the claim further, now using the term “test execution request” in place of “test application.”

However, the Office sees the same problems with the phrase “test execution request” as with the phrase “test application.” The problem stems from the fact that the word “test” does not explicitly define a limiting feature within the claim. Because, in its ordinary use, the word “test” can refer to the intent of use and the specification does not expressly *define* the term “test execution request.” in interpreting the claim, the Office must interpret the words in its “worst” reasonable light.

It seems to the Office, that if the applicant were to distinguish the claimed subject matter based on “test execution request” (or “test application,” or whatever term that contains the word “test”), the word “test” should be defined within the claim. (e.g., “testing application comprising instructions that are only executed when test flags are set”). The Office notes that such amendment would overcome the prior art of record.

2. The second issue, which the applicant has addressed, is related to “unidentified” system, as cited in the claims. Applicant’s position is that the feature is not shown in the cited reference.

In the prior Office action, the Office has noted that

Second, even if “processing resource” is viewed as a microprocessor, it is possible to view Wollrath’s client module (one that has been cited in the Office Action as corresponding to agent launcher) as a component separate from rmiregistry. In such interpretation, the module would supply “the required attribute” (i.e., the domain name of

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the “processing resource”) to the rmiregistry. To the module, the “processing resource” would be unidentified (i.e., its IP address is not known to the module), and the claim would read on Wollrath reference. See below, for the discussion of 35 U. S. C. 102.

In response, the applicant makes the following points,

The Applicants, however, cannot identify the above teachings in Wollrath. Specifically, the applicants do not find a teaching Wollrath that indicates it is possible to view Wollrath’s client module as a component separate from rmiregistry. Also, the Applicants do not identify a teaching in Wollrath regarding IP address of the processing resource being unidentified to the client module.

The first point the applicant raises, is “one may not view rmiregistry to be a separate from the client is unsupported.” The Office’s position is that Wollrath does not need to teach that point. In mapping each feature of the claim to a component in a prior art reference, the Office is making an *interpretation*. The requirement in the interpretation is that the mapping is “reasonable” to one of ordinary skill in the art, given the claim language. There is no legal restriction, in claim interpretation, that requires a subcomponent within a cited reference has to be considered as part of larger structure. The Office’s view is reasonable, because the rmiregistry that the Office referred to, is rmiregistry of the server, residing on the server host.

The second point the applicant raises, from the Office’s perspective, is more significant. To repeat, the applicant says, “the Applicants do not identify a teaching in Wollrath regarding the IP address of the processing resource being unidentified to the client module.”

In the Office’s view, whether the preceding is true or not depends on (1) the precise moment of the execution of the client code and (2) and indeed whether rmiregistry is considered

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part of the client system. (For the argument's sake, the Office will assume that the rmiregistry is not part of the client system, as it has put forth above).

To understand why the IP address of the remote object is not known to the client at all moments, one needs consider the general process involved in *all* remote method invocations. During the execution of the client code, the remote method invocation requires that there is a binding between the remote object reference and its name. Usually, the initial binding is provided at the server rmiregistry, at the start of the server side code. Note that the binding is an "association" (i.e., a data structure for lookup), that is stored at the rmiregistry of the server. Furthermore, the association is between a *remote object reference* and its name. The remote object reference is generally composed of several fields, and it contains the IP address at which the object resides.

When client executes its code, prior to the execution of remote method, it must be able to locate the remote server object (e.g., factory, etc). To do so, it generally performs a lookup of the remote object reference and assigns the reference to an interface variable. Once the remote reference is obtained, the client can then invoke remote methods on the client stub.

The preceding is important, because prior to the fetching of the remote object reference, the server is "unidentified." The *name* of the server is known to the client code before the remote reference is retrieved from the server-side rmiregistry. However, until the moment that the remote reference is in the client's possession, the server object's network identity is not

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known to the client. It should be clear that whether a server is “unidentified” depends on the time of the execution of client code, as well as to which procedure that identity is not known. Obviously, to the server side code, the server is “identified.”

In the applicant’s claim, the adjective “unidentified” is given without any indication, as to which device or process the test computer system is “unidentified.” Obviously, there must be a system to which the test system is identified; otherwise, it cannot be contacted and the second test execution request cannot successfully complete.

It seems to the Office, that if the applicant were to distinguish the claimed subject matter based on “unidentified” system, it would be helpful if the applicant specifies to which component the test system is unidentified, as well as when it is unidentified. Of course, there would be no question of when, if the device were unidentified at all times.

### ***Telephone Interview***

3. The Office will attempt to contact the applicant upon further review of the case, to discuss the case further. If the Office does not contact the applicant within reasonable time, the applicant is encouraged to contact the Office and the Examiner in charge of the instant case.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. **Claims 1-3 and 9, and 13** are rejected under 35 U.S.C. 102(e) as being anticipated by Wollrath et al (U. S. Pat. No. 6,487,607, Wollrath hereinafter).

With regard to **claim 1**, Wollrath discloses method for launching remote test execution request in a distributed test framework, comprising the operation of:

*using a first agent process having an agent launcher interface to launch a first test execution request having a call interface, wherein the call interface provides a reference to the first agent process such that the first test execution request and the first agent process communicate with each other during execution of the first test execution request* [See step 701, Fig. 7. In RMI environment shown in Fig. 6, a class method (which would use the “first agent process” or method) must call a process that implements RMI interface; Java language requires the protocol. Any invocation of the RMI is performed by, first, referencing the proper class object cast into the interface type and then invoking one of the methods of the interface. Note that starting any program constitutes “launching.” As read “first agent process” is the method without the RMI component 602 in Fig. 6 (RMI registry). The communication is made during the execution of rmiregistry];

*sending a launch request from the first execution request to the agent launcher interface using the reference to the first agent process as provided by the call interface of the first test*



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*execution request, wherein the launch request specifies a second test execution request to be launched, and wherein the launch request defines required attributes of an unidentified test computer system necessary to execute the second test execution request thereon [See step 703, Fig. 7. In Fig. 6, any class method that invokes RMI would cause the remote class object to load and launch the second execution request. The RMI call must contain attributes of a processing resource, because proper sequence of calls that locate the second execution request must be given service the “location” attributes of the processing resource. In other words, RMI service provides the mechanism of remote calls over the network. The call is not from the application without the rmiregistry, and therefore, up to the time of invocation, it is “unidentified” (i.e., only those resources with known IP address “identified”)];*

*operating the agent launcher to send a request to a system controller requesting identification of a test computer system having the required attributes necessary to execute the second test execution request [CPU or a computer is “system controller.” Any call from the “agent launcher” is sent to CPU for dispensing address (“identification”). Note that the system controller can also be viewed as JVM];*

*operating the system controller to identify the test computer system having the required attribute necessary to execute the second test execution request JVM or a processor is operated to “identify” the processing resource having the “required attribute” (domain name)]; and*

*launching the second test execution request on the identified computer system having the attributes defined in the launch request [See step 707 in Fig. 7. Properly working RMI call would cause the remote method of loaded class to be executed (“launched”). In the launch request, note the domain name (“attribute”) must be given. ].*

With regard to **claim 2**, Wollrath discloses the second test execution request is launched by a second “agent” process *executing on the identified test computer system*. Any Java program that has been started via RMI executes on the remote environment. See step 707, Fig. 7. The server is the processing resource.

With regard to **claim 3**, Wollrath shows *the second agent process that is registered with a look up service, the registering being configured to advertise the attributes of the identified test computer system to the system controller via the look up service*. See step 705, Fig. 7. RMI is an implementation of Java naming service. The second agent process (the remote object) must be registered, in order for its methods to be invoked. Rmiregistry advertises the domain names to a JVM's or other processors.

**Claims 9 and 13** substantively incorporate a subset of the limitations of claims 1-3 but in apparatus form rather than in method form. The reasons for the rejections of claims 1-3 apply to claims 9 and 13.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. **Claims 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over Wollrath. It would have been obvious to one skilled in the art at the time of the invention to modify steps disclosed Wollrath for the reasons provided below.

With regard to **claim 5**, Wollrath shows *the system controller that is configured to search the look up service to locate a test computer system having attributes substantially matching the attributes defined in the launch request*. See Fig. 5 for the lookup service.

The motivation for combining the use of lookup service with the steps Fig. 7 is as same as the sole purpose for the existence of the lookup service in Java environment: to locate a particular service. It is obvious to use the lookup service to locate a service, because that is what lookup services are for, whether the calling program is “controller” or “first agent.”

8. **Claims 6-8 and 15-20** are rejected under 35 U.S.C. 103(a) as being unpatentable over Wollrath in view of Jaworski ("Developer's Guide: Java 1.1") and "Process Manager 6.0 Programmer's Guide" (SUN hereinafter). It would have been obvious to one skilled in the art at the time of the invention to combine the features disclosed in Wollrath with those in Jaworski and SUN for the reasons provided below.

With regard to **claim 6**, Wollrath shows the method wherein *the second test execution request includes a second call interface*.

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Wollrath does not show *the second call interface includes a parameters hash table that provides initialization values for the second test execution request*. Jaworski shows an example of initialization parameters in an example Java program: see the constructor for class Hand on page 63.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use initialization, because the initialization method is a language construct; they are built into Java language itself to be used for setting the parameter values at the start of programs and during the construction of objects. (An analogy may help: one uses a steering wheel of an automobile to steer the car; the steering wheel is built into an automobile for the purpose of guiding the automobile. Incorporating the step of using the steering wheel into the process of controlling the automobile cannot render the control process any less obvious).

Wollrath also does not show passing initialization parameters by using hash table. However, SUN shows on page 5, section 5, how hash table maybe passed as an argument for initialization.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use hash table to pass initialization values to another process, because using the hash table allows one to pass a large body of variable-value pairs, which maybe unknown prior to the execution of the first agent process, in a compact notation.

With regard to **claim 7**, neither Wollrath does not show, but SUN shows that *the agent launcher interface of the first agent process further includes parameters that provide*

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*initialization values for the second test execution request.* Hash table in SUN provides the initial parameters.

With respect to **claim 8**, Wollrath does not show, but SUN shows that *the initialization values provided by the parameters of the agent launcher interface of the first agent process can be passed to the second call interface via the parameters of the hash table of the second call interface of the second test execution request.* See page 5, section 5. The hash table is used to pass environment variable-value pair (of the calling process) for initialization of environment variables.

**Claims 15-16** contain all the limitations of claims 6-8, but in apparatus form rather than in method form. The reasons for the rejections of claims 6-8 apply to claims 15-16.

**Claims 17-18** include software versions of the subset of limitations discussed above in reference to claims 1-3 and 5-8. The reasons for the rejections of claims 1-3 and 5-8 apply to claims 17 and 18. Note that claim 17 cites “attributes of an unidentified processing resource necessary to execution the second test execution request are passed to the agent launcher process.” However, the limitation is merely a parameter passing mechanism in Java programming language; it is built into the language. For discussion of the added limitation, see the above discussion of claim 1, as well as the response to the Remarks.

With regard to **claim 19**, it speaks of “*the selected test computer system is selected from a list of test computer systems advertised on a lookup service.*” However, the limitation merely describes the function of location resolution in any Java lookup service. That is, when one uses a lookup service in any Java environment, the lookup service selects the requested service that resides on a particular device (selected from a list of multiple devices).

**Claim 20** substantively cites a limitation that is a software version of the limitation cited in claim 2. The reasons for the rejection of claim 19, therefore, apply to claim 20.

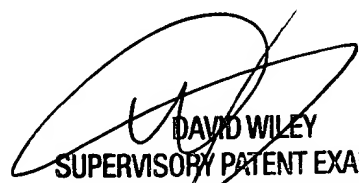
***Conclusion***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ji-Yong D. Chung whose telephone number is (571) 272-7988. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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